

What is claimed is:

1. A testing apparatus for testing a terminal under test pursuant to a control environment emulative of an operating environment, said apparatus comprising:

5 an operating environment emulator for generating emulated signals for application to the terminal under test, the emulated signals emulative of signals generated and communicated in the operating environment, emulation of the operating environment utilizing a modeled radio channel, modeled using a channel impulse response estimate formed of a combination of at least a first non-diffuse component and at least a diffuse component; and

10 a detector adapted to receive indications of responses made by the terminal under test in response to the application to the terminal under test of the emulated signals generated by said operating environment emulator.

2. The apparatus of claim 1 wherein the terminal under test selectively 15 operates to calculate a positioning indication, wherein responses made by the terminal, and of which said detector is coupled to receive, comprise calculations made by the terminal under test of the positioning indication.

3. The apparatus of claim 2 wherein the emulated signals generated by said 20 operating environment emulator comprise position-determining signals that permit the terminal under test to calculate the positioning indication.

4. The apparatus of claim 1 further comprising a storage element for storing values representative of the channel impulse response, the values stored at said storage 25 element accessible by said operating environment emulator pursuant to generation of the emulated signals.

5. The apparatus of claim 1 wherein said operating environment emulator comprises a network emulator, said network emulator for emulating aspects of an 30 operating network with which the terminal under test is operable to communicate.

6. The apparatus of claim 5 wherein the operating network that said network emulator emulates comprises a plurality of base stations, each of which generates a pilot

signal, and wherein said network emulator emulates the pilot signals generated by the plurality of base stations.

7. The apparatus of claim 6 wherein the plurality of base stations, and pilot
5 signals generated thereat, emulated by said network emulator comprise base stations
operable in a code-division, multiple-access cellular communication system.

8. The apparatus of claim 6 wherein said operating environment emulator
further comprises a radio channel emulator for emulating a radio channel upon which
10 signals are communicated to the terminal under test when operated in the operating
environment, the radio channel emulated by said radio channel emulator forming the
modeled radio channel, and the pilot signals formed by said network emulator are applied
to said radio channel emulator.

15 9. The apparatus of claim 1 wherein said operating environment emulator
comprises a radio channel emulator for emulating a radio channel upon which signals are
communicated to the terminal under test when operated in the operating environment, the
radio channel emulated by said radio channel emulator forming the modeled radio
channel.

20 10. The apparatus of claim 1 further comprising a position determination
entity emulator adapted to receive the responses made by the terminal under test, said
position determination entity for generating the indications of the responses to which said
analyzer is adapted to receive.

25 11. The apparatus of claim 10 wherein the terminal under test operates to
perform advanced forward link trilateration measurements and wherein the responses
made by the terminal under test comprises values of the advanced forward link
trilateration measurements.

30 12. The apparatus of claim 1 wherein said detector logs the indications of the
responses of which said analyzer is adapted to receive.

13. The apparatus of claim 1 further comprising a test controller, said test controller for controlling operation of said operating environment emulator and said detector.

5 14. The apparatus of claim 13 wherein said test controller causes said operating environment emulator to generate emulated signals emulative of a first operating environment and of a second operating environment.

10 15. A method for testing a terminal under test pursuant to a control environment emulative of an operating environment, said method comprising the operations of:

15 generating emulated signals for application to the terminal under test, the emulated signals emulative of signals generated and communicated in the operating environment, emulation of the operating environment utilizing a modeled radio channel, modeled using a channel impulse response estimate formed of a combination of at least a first non-diffuse component and at least a first diffuse component;

applying the emulated signals generated during said operation of emulating to the terminal under test; and

20 detecting indications of responses made by the terminal under test in response to application, during said operation of applying, of the emulated signals to the terminal under test.

25 16. The method of claim 15 further comprising the operation, responsive to the application of the emulated signals during said operation of applying to the terminal under test, of calculating, at the terminal under test, a positioning indication, the indications detected during said operation of detecting indicative of the positioning indication.

30 17. The method of claim 16 wherein said operation of calculating comprises calculating advanced forward link trilateration measurements responsive to the emulated signals applied during said operation of applying.

18. The method of claim 15 further comprising the operation, prior to said operation of generating, of storing values representative of the channel impulse response,

the values stored during said operation of storing, accessible pursuant to said operation of generating.

19. The method of claim 15 wherein said operation of generating the emulated
5 signals comprises emulating aspects of an operating network with which the terminal
under test is operable.

20. A emulating system for determining positional coordinates of a mobile
device comprising:

10 a network emulator for generating multiple test signals each test signal
associated with a communication channel of a base transceiver station having geographic
coordinates within the specific geographic area;

15 a channel emulator for processing each test signal using simulation data,
and generating an channel response signal for each test signal indicating the effects of the
simulation data, wherein the simulation data comprises interference parameters that
represent the reflective, diffractive, path loss, diffusive, and Doppler effect properties
created by selectable obstructions over a selectable distance d between the mobile device
and the base transceiver station and the vector summation of these properties; and

20 a position detection emulator for calculating positional coordinates based
on each channel response signal generated and the geographic coordinates of each base
transceiver station.